

REMARKS

Applicants thank the Examiner for the thorough examination given the present application.

Status of the Claims

Claims 1 and 3-4 are pending in the present application. Claims 1 and 3-4 are amended to further define the present invention. Support for the amendment to claim 1 can be found in the present specification, *inter alia*, at page 8, lines 19-22. Thus, no new matter has been added. Based upon the above considerations, entry of the present amendment is respectfully requested.

In view of the following remarks, Applicants respectfully request that the Examiner withdraw all rejections and allow the currently pending claims.

Issues under 35 U.S.C. § 112, second paragraph

Claims 1 and 3-4 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. First, the Examiner asserts that the phrase “P represents a chain made only from an olefin” in claim 1 is confusing. Second, the Examiner asserts that claim 1 recites Mn but does not define Mn. Third, the Examiner asserts that claims 3 and 4 are confusing since it is not understood what constitutes each step. With respect to step 1, the Examiner argues that the term “it” is not clearly defined. Regarding step 2, the Examiner argues that the term “the resultant” is unclear. Finally, the Examiner asserts that, with respect to the chemical conversion of step 3, it is not clear what is being converted and into what it is converted. Applicants respectfully traverse.

Claims 1 and 3-4 are amended herein in an effort to overcome these rejections. As such, Applicants respectfully request that the rejections be withdrawn.

Issues over the Cited References

1) Claim 1 is rejected under 35 U.S.C. § 102(b) as being anticipated by Murata et al. or WO ‘340 (WO 02/42340 with US 7,125,834 being used as its English translation) or Nubel et al. ‘383 (US 5,731,383) or Gottfried et al.

2) Claims 3-4 are rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Murata et al. or Gottfried et al. or WO '340.

Applicants respectfully traverse. Reconsideration and withdrawal of these rejections are respectfully requested.

Legal Standard for Determining Anticipation

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art.” *Brown v. 3M*, 265 F.3d 1349, 1351, 60 USPQ2d 1375, 1376 (Fed. Cir. 2001). “The identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Legal Standard for Determining Prima Facie Obviousness

MPEP 2141 sets forth the guidelines in determining obviousness. First, the Examiner has to take into account the factual inquiries set forth in *Graham v. John Deere*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), which has provided the controlling framework for an obviousness analysis. The four *Graham* factors are:

- (a) determining the scope and content of the prior art;
- (b) ascertaining the differences between the prior art and the claims in issue;
- (c) resolving the level of ordinary skill in the pertinent art; and
- (d) evaluating any evidence of secondary considerations.

Graham v. John Deere, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966).

Second, the Examiner has to provide some rationale for determining obviousness. MPEP 2143 sets forth some rationales that were established in the recent decision of *KSR International Co. v Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007).

As the MPEP directs, all claim limitations must be considered in view of the cited prior art in order to establish a *prima facie* case of obviousness. See MPEP 2143.03.

Distinctions over the Cited References

As amended, claim 1 recites different functional groups at both ends of the polymer chain. In contrast, the polymers disclosed in Murata et al., WO '340, and Nubel et al. '383 have the same functional groups at both ends of the polymer chain. Specifically, Murata et al. disclose a polypropylene having CO groups at both ends of the polymer. WO '340 discloses a polymer having double bonds at both ends of the polymer chain prepared by thermal decomposition. Nubel et al. '383 disclose a polymer prepared by a ring opening polymerization of cycloolefin, which has a double bond in its polymer chain. Thus, these references do not disclose each and every element of claim 1 or claim 3 dependent thereon.

Claim 1 also recites that the polymer chain exhibits syndiotacticity. The polymer chain of the polymer disclosed in Gottfried et al. does not exhibit syndiotacticity. Thus, Gottfried et al. do not disclose each and every element of claim 1 or claim 3 dependent thereon.

Turning to claim 4, the claim was amended to a process claim. Murata et al. disclose a process of preparing a polymer having functional groups at both ends of the polymer chain comprising a step of polymerizing dienes and then chemically converting the resultant diene polymer. Therefore, the process is different from that of the present invention, which comprises a process of polymerizing a polar-group-containing olefin and the chemical conversion process is not an essential step.

As discussed above, WO '340 discloses a process to obtain a polymer having double bonds at both ends of the polymer chain prepared by thermal decomposition. The obtained polymer and the process are different from those of the present invention. Gottfried et al. disclose a similar process comprising using a Pd complex catalyst. The Pd complex catalyst highly exhibits a chain-walking property. Therefore, the resultant polymer has an irregular branched structure and has no syndiotacticity regardless of the kinds of monomers used.

In contrast, the present invention is a process comprising using a transition metal compound of group 4 or 5 of the periodic table. As explained above, the process of the present invention provides a different polymer than those polymers disclosed in Gottfried et al.

Accordingly, the present invention is not anticipated by Murata et al., WO '340, Nubel et al. '383, or Gottfried et al. since the references do not teach or provide for each of the limitations recited in the pending claims.

Moreover, a *prima facie* case of obviousness has not been established. To establish a *prima facie* case of obviousness of a claimed invention, all of the claim limitations must be disclosed by the cited references. As discussed above, Murata et al., WO '340, and Gottfried et al. fail to disclose all of the claim limitations of independent claims 1 and 4, and those claims dependent thereon. Also, any combination of these references would not render the present invention obvious.

Furthermore, the cited references or the knowledge in the art provide no reason or rationale that would allow one of ordinary skill in the art to arrive at the present invention as claimed. Therefore, withdrawal of the outstanding rejection is respectfully requested. Any contentions of the USPTO to the contrary must be reconsidered at present.

Conclusion


All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Chad M. Rink, Registration No. 58,258, at the telephone number of the undersigned below to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

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Respectfully submitted,

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